

FILE



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April 10, 2009

2009 APR 10 PM 4:22

PUCO

VIA HAND DELIVERY

Ms. Renee Jenkins
Docketing Chief
Public Utilities Commission of Ohio
180 East Broad Street, 13th Floor
Columbus, Ohio 43215-3793

Re: Dominion East Ohio Franklin 20 Inch Pipeline Project
Case No. 08-289-GA-BTX
Certificate Condition No. 8

Dear Ms. Jenkins:

This letter is to inform the Ohio Power Siting Board that with respect to the Franklin 20 Inch Pipeline Project, on March 31, 2009 by electronic mail; Dominion East Ohio ("DEO") provided staff a copy of the Execution Plan for HDD Crossings. This document was provided in compliance with Condition No. 8 of the Opinion, Order and Certificate issued March 23, 2009.

If you have any questions, please call me at the number listed above.

Sincerely,

Sally W. Bloomfield

Enclosure

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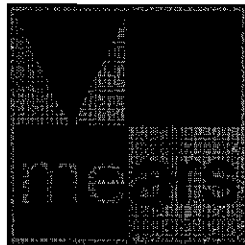
Dominion East Ohio Gas

Execution Plan for HDD Crossings

- CSX Railroad (Clinton, Ohio) near CSX Railroad Milepost 143 -**
 - Hampsher Road -**
 - West Nimisila Road -**
- East of Dominion's Chippewa Compressor Sta. -**

Submitted by

MEARS Group Inc.



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1 INTRODUCTION

Horizontal directional drilling is recognized as the least environmentally disturbing construction technique available for installing pipelines under rivers and other obstacles. The primary alternative to HDD would be open trenching. The measures presented in this plan will become integral components in the construction procedure.

The equipment to be used in an HDD operation includes: HDD rig, power unit/control cab, mud pump, mud mixing/cleaning plant, backhoe, crane, and other miscellaneous support supplies and equipment.

This execution plan describes procedures typically used by Mears for the installation of maxi sized (Horizontal Directional Drill) HDD crossings where only one drill rig is required.

This plan may be modified as necessary to suite project specific requirements.

HDD operations will be undertaken on a twelve (12) hour per day, six (6) days per week basis. Once the Pilot hole has begun the HDD process continues through the final ream pass in an orderly fashion as to not cause delays with the completion of the drill. "Pullback" operations (see section 5.4) will be continuous and hence may result in an extended workday of up to 24 hours.

For the four locations that are to be subjected to the HDD operation, geotechnical investigations were conducted to carefully evaluate the subsurface conditions for engineering of the proposed HDD. Due to the file size, the evaluation reports for this work are in .pdf format. If needed, they can be made available to the necessary inquiring party.



Crossing #1: Hampsher Rd.

The above proposed pipeline crossing is for twenty (20) inch diameter steel pipeline. The crossing will pass beneath Hampsher Road and an unnamed stream for approximately 1,405 feet at a maximum depth of 38 feet. The subject crossing is located in sections 26 and 27 of Franklin Township, in the County of Summit, Ohio.

The above crossing will be located within the existing Dominion East Ohio Gas pipeline right of way (ROW). Staging and construction for the proposed Horizontal directional drilling (HDD) will be conducted in upland fields, outside of any wetlands or riparian zones. The benefit of utilizing the Horizontal Directional Drilling method in this particular area is to reduce the level of disturbance to the local community and the environment. The proposed crossing would circumvent the use of open cut trenching of Hampsher Road, Wetland 10 and Stream S-7.

Crossing # 2: West Nimisila Road

The above proposed pipeline crossing is for twenty (20) inch diameter steel pipeline. The crossing will pass beneath W. Nimisila Road and a small drainage ditch for approximately 935 feet at a maximum depth of 50 feet. The subject crossing is located in sections 27 and 28 of Franklin Township, in the County of Summit, Ohio.

The above crossing will be located within the existing Dominion East Ohio Gas pipeline right of way (ROW). Staging and construction for the proposed Horizontal directional drilling (HDD) will be conducted in upland fields, outside of any wetlands or riparian zones. The benefit of utilizing the HDD method in this particular area is to reduce the level of disturbance to the local community and the environment. The proposed crossing would circumvent the use of open cut trenching of W. Nimisila Road, a drainage ditch, Wetland 9a, 9b and 9c and Stream S-6.



Crossing # 3: CSX Railroad - Tuscarawas River - VanBuren Road

The above proposed pipeline crossing is for twenty (20) inch diameter steel pipeline. The crossing will pass beneath the CSX Railroad, the Tuscarawas River, and Van Buren Road for approximately 3,275 feet at a maximum depth of 84 feet. The subject crossing is located in sections 28 and 29 of Franklin Township, in the County of Summit, Ohio.

The above crossing will be located within the existing Dominion East Ohio Gas pipeline right of way (ROW). Staging and construction for the proposed Horizontal directional drilling (HDD) will be conducted in upland fields, outside of any wetlands or riparian zones. The benefit of utilizing the HDD method in this particular area is to reduce the level of disturbance to the local community and the environment. The proposed crossing would circumvent the use of open cut trenching of the Tuscarawas River (Stream S-4), Van Buren Road, Wetland 7a and 7b, Historic canal district, and Summit County Metroparks towpath trail. Also, as mentioned above, it will eliminate conventional bore and casing methodology for crossing the CSX railroad.

Crossing # 4: East of Dominion's Chippewa Compressor Station

The above proposed pipeline crossing is for twenty (20) inch diameter steel pipeline. The crossing will pass beneath streams and wetlands, located east of Dominion East Ohio's Chippewa Compressor Station, for approximately 1,425 feet at a maximum depth of 46 feet. The subject crossing is located in section 23 of Chippewa Township, in the County of Wayne, Ohio.

The above crossing will be located within the existing Dominion East Ohio Gas pipeline right of way (ROW). Staging and construction for the proposed Horizontal directional drilling (HDD) will be conducted in upland fields, outside of any wetlands or riparian zones. The benefit of utilizing the HDD method in this particular area is to reduce the level of disturbance to the local community and the environment. The proposed crossing would circumvent the use of open cut trenching of Wetland 1, 2, and 3, and Streams S-1 and S-2.



2 HDD EQUIPMENT

For the purposes of this discussion a drill spread is defined to be a single drill rig and all its associated mud handling and drill pipe handling equipment. One drill spread will be used. It will be positioned at the entry side of the crossing.

A detailed description of the equipment that will be included in the drill spread follows.

2.1 Drilling and mud handling equipment

The drill spread will have the following major equipment.

Drill rig

Thrust/Pullback:	500,000 lbs
Rotary Torque:	61,300 lbs. @ 43 rpm
Power:	Twin CAT
Type:	Frame & Axels Mounted
Manufacturer:	CMS

Mud pump

Main Pump:	Tulsa Triplex 780
Power:	CAT 3406
Type:	Skid mount
Capacities:	896 gpm @ 260 strokes

Cleaning System

Power:	CAT 3406
Generator:	250 KW
Type:	48 ft, tandem axle, rock over trailer
Manufacturer:	Tulsa Rig Iron
Capacities:	1000 gpm 200 barrel pits

2.2 Drill pipe

All drill pipe will be 5" or 5-1/2" API white band. The pipe will be grade G105 or better. Current inspection certificates will be provided for all drill pipe.



2.3 Other Equipment

The following additional equipment will be supplied with each drill spread.

Qty	Description
1	Track hoe
1	Forklift
2	4" Trash pumps
200'	3" Discharge hose
2	500bbl frac tanks, if required
1	Tool van
1	Welder
1	Fuel tank 500gal, if required
As required	Flat bed trailers for drill pipe



3 DRILL FLUID HANDLING, CONTAINMENT AND DISPOSAL PLAN

Horizontal directional drilling is recognized as the least environmentally disturbing construction technique available for installing pipelines under rivers and other obstacles. The primary alternative to HDD would be open trenching.

The measures presented in this plan will become integral components in the construction procedure.

3.1 Purpose of the plan

The purpose of this plan is to establish monitoring and response criteria that will minimize the environmental effects of the HDD operation. In particular this plan addresses the containment and control of drilling fluids. The HDD operation uses drilling fluid to facilitate the drilling of a borehole and installation of the product pipe. The fluid also serves to stabilize the surrounding formations and provide a seal that reduces the risk of the fluid migrating into the formation. The fluid is composed of naturally occurring clay and water. The clay is insoluble and made up of small particles that function as both a lubricant for the drill head and pipe and a sealant that fills the pore spaces surrounding the drill hole. Various benign, non-toxic additives may be added to the drilling fluid to optimize its properties.

3.2 Loss or release of Drilling fluid

With HDD, it is possible that some of the drilling fluids will be lost in fractures within the formation. In cases where the fracture is horizontal these lost fluids will not surface. While it is not anticipated, in other cases, drilling fluids may reach the surface (e.g., the fracture comes close enough to the surface that the pressure causes the release of drilling fluid above ground). Such a release is termed an inadvertent return.

A key to containing and controlling an inadvertent return is early detection and quick response by the HDD crew. This plan will identify the activities to be monitored and appropriate response actions to be taken to ensure that any release of drilling fluid is minimized. The plan outlines a process of monitoring the drilling fluid in order to identify a loss-of-returns situation and to determine if there is a release to the surface. Specific measures to be taken to reduce the amount and likelihood of surfacing drilling fluid, and other actions to be taken, are included.

As stated above, the drilling fluid mixture typically consists of water and bentonite clay. Inert, non-toxic polymers may be added to the mixture to improve its properties. In the event of an inadvertent return Lost Circulation Materials (LCM) may also be added to the fluid. LCM's typically include cotton dust, cottonseed hulls, wood fiber, and mica and cedar fiber.



3.3 HDD installation process

3.3.1 Pilot hole drilling

The drilling of the pilot hole includes the use of drilling fluid to run the drill motor or jet bit to cut through the earth material, to seal off fractures in the formation, to lubricate the drill pipe during installation, and to remove the drilled soil or cuttings from the bore. The drilling fluid is pumped down the inside of the drill pipe and exits through the drill bit. The fluid then can return to the surface at the rig site through the annular space between the outside of the drill pipe and the borehole. The fluid returning to the drill site is called "returns". At the beginning of the pilot hole, a large percentage of the drilling fluid returns to the rig site. As the drill progresses, more of the returns are absorbed by the earth or rock formation and are not returned to the rig site. At some point, gravity and friction overtake the ability of the fluid to return to the drill site. It is common to not have any of the fluid return to the drill site during the majority of the bore, without any release of the fluid to the surface. The drilling fluid is usually absorbed by the formation or is drawn down into fractures. It is important to understand that a loss of returns, even a complete loss of returns, is a fairly normal occurrence during HDD that does not necessarily mean the drilling fluid is coming to the surface or impacting the river bottom environment.

When the pilot hole is completed and the drill bit "punches out", a relatively small quantity of drilling fluid will be released at this surface point; however, it will be quickly contained and controlled.

3.3.2 Reaming and pipe pulling

Reaming will be carried out in either the same or the opposite direction from pilot hole drilling whereas pipe will be pulled in from the opposite direction. The reamer will progress from one end to the other of the drilled hole. During reaming and pipe pulling a considerable percentage of the drilling fluid used will exit the borehole at either the "entry point" or the "exit point". The returns emitted at both sites will be collected and cleaned for recycling. Normally the primary "cleaning plant" will be located at the "entry point" next to the rig; therefore returns from the "exit point" must be cleaned with a second "pipe side" plant, or pumped back to the rig side via a "return line", or collected and trucked back via tankers.

During reaming and pipe pulling, drilling fluid may be lost into the surrounding formation in much the same manner as during the drilling of the pilot hole. The only significant difference is that the volumes of fluid that are used are larger.

During drilling of the pilot hole, reaming, or pipe pulling, a complete and sudden loss of returns could be an indication that a significant ground fracture has been encountered. In most cases, the drilling fluids are drawn down by gravity or seal off the fracture. A complete and sudden loss of returns is a signal to the HDD crew to watch closely for a possible surface release. This plan uses this, as well as visual indications, as triggers for response and mitigation actions.



3.4 Typical Control Measures used

Typical measures that are put in place to ensure that a release of drill fluid will be effectively dealt with include the following:

3.4.1 Training

Supervisory and other key personnel that will be on site will have received training with respect to the control and containment of drilling fluid. The training includes:

- the details of this plan
- the need for environmental protection
- environmental resources located at or near the site
- specific permitting conditions and requirements
- the need to monitor the HDD operation
- lines of communication
- lines of authority and responsibility
- the information the HDD contractor will need to provide to the Owner and other site representatives
- contact names and phone numbers of the appropriate individuals and agencies
- events that need to be reported and to whom

3.4.2 HDD Monitoring

The site superintendent has the overall responsibility for monitoring the HDD operations for inadvertent returns. He may delegate this responsibility as he sees fit. The drill rig operator or driller is the individual who is responsible for monitoring drilling fluid pressures and fluid returns. In the event of a significant drop in down hole fluid pressure or fluid returns the driller will notify the site superintendent. The superintendent, with the assistance of the more senior crewmembers is also responsible for visually monitoring the length of the bore for inadvertent returns.

During the cleanup of spilled drilling fluid, the characteristics of the fluid released, quantities of fluid being cleaned up, the extent of the release and any apparent effects, and general progress of work will be documented in the driller's log.

3.4.3 Response & Notification

The HDD contractor shall immediately notify Owner's representative of any sudden losses in returns or any inadvertent returns. If an inadvertent return to the ground surface is observed, the HDD contractor will take certain reasonable actions to eliminate, reduce, or control the release. The actions to be taken will depend on the location and time of release, the geologic conditions there and the volume of the



release. This section outlines the response measures that will be implemented for inadvertent returns to the ground surface.

3.4.4 Inadvertent return to the Ground Surface

If a release occurs in an upland area, the HDD contractor will take appropriate reasonable actions to reduce, eliminate, or control the release. The actions to be taken will depend on the location of the release point and the amount of fluid being released. The actions may include:

- constructing a small pit or sand bag coffer around the release point, installing a section of geotextile filter fabric ("silt fence") and/or hay bales to trap as much sediment as possible, and placing a pump hose in the pit to pump the drilling fluid back to the bore site
- reducing drilling fluid pressures
- thickening drilling fluid mixture
- adding pre-approved loss circulation materials (LCM's) to the fluid mixture

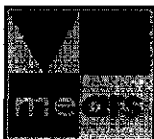
Which of these actions will be implemented will depend on the specific boring conditions at the time of the release and the volume of the release. The HDD contractor, in consultation with the Owner, will determine which methods are the most appropriate to eliminate, reduce or control the release. Drilling fluid that is recovered will be recycled and reused to the extent that is practical. The HDD contractor will document the nature of the release including physical characteristics of the fluid, the location and extent (area, estimated volume and duration), the modified procedures used to reduce the rate of leakage, and the extent to which these measures are successful in controlling or eliminating the release.

3.4.5 Inadvertent return into a River Bottom

Not applicable

3.4.6 Returns to entry and exit points

Measures will be implemented to contain and control the drilling fluid at the HDD crossing entry point and exit point. These measures typically consist of the excavation of a small containment pit around the points. Pumps will be used to remove any fluid that collects in the pit and pump it to either a fluid cleaning system or to a steel storage tank. All drilling fluid that is recovered will be recycled and reused. It is normal that drilling fluid is spilled on the drill rig when threaded connections in the drill string are broken. This fluid will be contained and directed by means of a shallow trench to the entry pit where it will be collected and recycled.



3.4.7 Documentation

The reports that will be submitted to the Owner and the drillers log will contain all relevant information pertaining to any inadvertent returns and the measures implemented to contain and control them.

3.4.8 Cleanup

Immediately following the successful completion of the pipeline pullback, the HDD contractor will clean all affected areas of trash and debris. All excess drilling fluids remaining in pits and tanks will be collected and disposed of by:

- farming into the permanent ROW if permitted
- hauling to pre-approved disposal areas
- final cleanup must be acceptable to the landowner, the project Owner, and controlling local, state and federal agencies

3.4.9 Post Project follow-up

Post project follow-up will only be necessary if a major or sustained release of drilling fluid occurs. The post project follow-up will include:

- videotaping the locations where the release occurred
- determining if environmental impact has occurred
- developing remediation actions in conjunction with the appropriate agencies



4 SITE PREPARATION AND MOBILIZATION

4.1 Site Preparation

Prior to the mobilization of Mears' HDD equipment, the worksite and access roads will have been prepared by the Prime Contractor. Site preparation may include surveying, clearing and degrubbing, topsoil stripping and storage, and leveling. The ground surface of the worksites and the access roads will be made suitable for heavy road trucks and trailers.

Once the site work has been completed, the entry and exit points of the crossing will be staked by the Prime Contractor. A line of site between the entry and exit points should be cleared. This line of site will allow the drill rig to be aligned with the centerline of the crossing.

4.2 Mobilization onto site and rig up

4.2.1 Mobilization

Mears will mobilize all of its equipment by truck to the entry side worksite.

4.2.2 Drill rig set up

The first major pieces of equipment that will be brought onto the site and set up will be the drill rig and drill cab. The rig will be positioned relative to the entry point and will be set up at the required entry angle. The control cab will be positioned so that the driller has a clear view of the drill rig and the drill floor area.

4.2.3 Anchor installation

An anchor system is required to immobilize the drill rig. The anchors must be able to resist both push and pull loads that will be exerted by the drill rig throughout all the drilling reaming and pullback operations.

The anchor system will consist of steel H beams driven into the ground through holes provided in the rig's deadman beam for this purpose.

4.2.4 Ancillary drill equipment set up

The balance of the equipment making up the drill spread will be brought onto the site and set up. The individual pieces of equipment will be arranged according to the pre determined drill spread layout. The layout will be designed to provide an efficient flow of materials and equipment on the worksite while maximizing employee safety.



4.2.5 Surface coil installation

Mears will supply a surface guidance system. The Trutracker (or Paratracker) system will be used. This system requires the installation of an electrical cable on the ground surface. The cable will be stretched taut between survey stakes driven into the ground along the alignment of the bore. The locations and elevations of the stakes will be surveyed, recorded and entered into the computer program for the guidance system.



5 DRILLING PLAN

5.1 Pilot hole Drilling

5.1.1 Pilot hole diameter

Mears will drill the pilot hole with a 9-7/8" Tungsten Carbide Insert (TCI) tri-cone roller bit. The bit will be installed on a 6 3/4" positive displacement mud motor, manufactured by Black Max or equal. This 23-foot long motor can produce up to 3500 ft-lbs of torque with an input of between 300-600 gpm, operating at a maximum pressure differential of 700 psi at 75-300 rpm.

The drill path will be monitored by an electronic steering tool housed in non-magnetic collars at the down hole end of the drill string just behind the motor. A package of accelerometers and magnetometers detects the horizontal relation of the drill string to the earth's magnetic field and its vertical inclination relative to the earth's gravitational field. This electronic data is transmitted to a computer located on the surface in the drill cab, along an insulated wire inside the drill pipe. There azimuth and inclination calculations are preformed producing continuous survey coordinate locations. Survey coordinates for the As-built drawing will be recorded once every 30 ft. Since magnetic anomalies can interfere with the operation of the principal steering tool, TruTracker or Paratracker (system accuracy rated to +/- 2% of the vertical depth up to 200 feet) will be used as much as possible to provide independent verifications of actual, non-dependent isolated locations.

For the 9-7/8" pilot hole Mears will pump drill fluid at the rate of up to 10 bbls/min.

5.2 Reaming

Once the pilot hole is complete, the bottom hole assembly (BHA) for the reaming operation will be fitted to the end of the drill string at the exit point.

Fluid will be pumped down hole at a rate of up to 12 bbls/min.

The BHA during reaming will consist of a hole opener (up to 30 inch diameter) equipped with TCI cutters. The hole opener will be manufactured by Bico or equivalent (see appendix for detailed description).

5.3 Cleaning pass

Once the reaming operation is complete, the borehole will be cleaned before starting the pullback operation. The hole opener will be tripped out through the entire length of the borehole. Drilling fluid will be pumped down hole at the same rate as used for the reaming operation. This clean drill fluid will displace the dirty heavier drill fluid reducing the pull force required to place the product pipe in the borehole.

5.4 Pullback operations

Once the swabbing operation is complete, the pullback operation will begin.



5.4.1 Hookup for pullback

The BHA from the Cleaning pass will be removed from the end of the drill string. The hole opener will be orientated so that its cutting surfaces face the drill rig. The swivel and connecting assembly will be screwed to the trailing end of the swivel. The pullhead will be connected to the drill string. The connection will consist of a pinned knuckle joint linking the pullhead to the swivel.

The Prime Contractor will have welded the pipeline to the pull head. The pipe will have been welded, tested, and strung out on rollers.

The Prime Contractor shall supply cranes or track hoes to support the pipe bundle in the arc for the over bend between the horizontal string of pipes on roller and the inclined borehole.

5.4.2 Pullback

The drill rig at the entry point will be used to slowly pull the entire assembly into the borehole.

Once the hole opener enters the exit pit the drill rig will begin rotating the drill string and hole opener. Drill fluid will be pumped through the drill string to the hole opener. The rate of pumping will be the same as was used during the cleaning operation.

As the product pipe is pulled into the borehole it will displace drill fluid. Prior to beginning pull back sufficient frac tanks will be made available on site to contain the volume of drill fluid displaced by the pipe bundle.



6 RIG DOWN AND DEMOBILIZATION

Once the pullback operation is over the HDD installation will be complete.

For the most part the equipment will be rigged down and demobilized in the reverse order in which it was mobilized and rigged up. All excess drill fluid and cuttings will be hauled off for disposal.

The site will be cleaned up and left in a similar state to which it was found when mobilization began.



7 AS-BUILT SURVEY:

Throughout the pilot-hole drilling operation, records will be kept of progress and surveyed location. Upon punch out of the pilot hole, the surveyors will provide coordinates of the actual exit point. These surveys will form the basis of as-built drawings to be forwarded to the Prime contractor.



APPENDIX A

Vari-Bore™ II Hole Opener



The BICO Vari-Bore II Hole Opener* is a new and unique tool built for horizontal directional drilling. The Vari-Bore II Hole Opener combines the strength and reliability of oilfield hole openers with the versatility of hole openers with threaded cutters. Additionally, the Vari-Bore II Hole Opener has superior cutting action versus split bit hole openers while having comparable operating costs.

1 – Three to five agitators reduce hole packing.

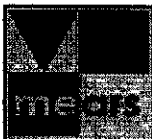
2 - Hard-facing reduces wear and maintenance costs.

3 – Six to ten strategically placed fluid nozzles promote hole and cutter cleaning.

4 - Sealed, pressure compensated roller bearing cutters available in tungsten carbide insert (TCI) or milled tooth.

5 - Cutters are supported on both ends, unlike other adjustable hole openers, reducing chance of losing cutters in hole or damaging body.

* Patent Pending



Standard Size Vari-Bore™ II Hole Openers					
(Special sizes & threads available on request)					
Tool	Hole Opening	Minimum	Number of	Body OD	Threads
Series	Range (in)	Pilot (in)	Cutters	(in)	Box x Box
V4B	8-1/2 - 12	4-1/4	3	3-1/2	2-3/8" IF
V6B	12 - 16	6-1/4	3	4-3/4	3-1/2" IF
V8B	16 - 26	8-1/2	3	6-1/2	4-1/2" IF
V17B	24 - 34	17-1/2	3	9-1/2	7-5/8" Reg
V26B	32 - 42	26	3	9-1/2	7-5/8" Reg
V36B	42 - 52	36	4	9-1/2	7-5/8" Reg
V42B	48 - 58	42	4	9-1/2	7-5/8" Reg
V48B	54 - 84	48	5	9-1/2	7-5/8" Reg



APPENDIX B

Contacts for Ecological and Cultural Sites Crossed by HDD

Cultural Areas:

Ohio Historic Preservation Office (OHPO):

Contact: Julie Quinlan (614) 297-2300 or 1-800-686-6124

Ecological Areas:

Summit County Metroparks:

Contact: Mike Johnson (330) 865-8057 ext. 221

All Areas - Dominion Environmental Department Contacts:

Brad Will (330) 664-2578 or (216) 570-7899

EnviroScience (Contractor/Environmental Inspector):

David Fredle (330) 688-0111 or (330) 714-8928

